# SYNOPSIS OF THE GENUS *OENOPION* (COLEOPTERA: TENEBRIONIDAE: COELOMETOPINI)

JOHN T. DOYEN

Division of Entomology
University of California, Berkeley, 94720

ABSTRACT

Available information regarding the species of the genus *Oenopion* Champion is summarized. A new species, *adeptus*, is described, and the species *Iphthimus zopheroides* Horn is transferred into *Oenopion*. This generic change is supported by differences in the composition of the defensive secretions of the 2 genera, as well as morphological evidence.

---

Until the present time the genus *Oenopion* has included a single species, known only from the type specimen. The genus and species have remained practically unknown because of unavailability of specimens and have never received comprehensive treatment. This investigation has revealed a new species from northeastern Mexico and also has shown that *Iphthimus zopheroides* Horn should be included in the genus *Oenopion*.

The species of *Oenopion* occur in montane regions of Mexico and southwestern United States. Available information suggests that they are largely restricted to oak-woodland habitats, where the adults shelter beneath loose bark of tree snags.

## GENUS *Oenopion* CHAMPION

*Oenopion* Champion, 1885:98. Type species, *Oenopion gibbosus* Champion, 1885, monobasic.

DESCRIPTION OF MALE: Body micropterous, robust, convex, about 2.5 times longer than wide, black.

*Head*: Cranium slightly more than half as wide as pronotum, widest between antennal insertions, slightly constricted behind eyes; epistoma weakly indented at epistomal sutures, angulately rounded anteriorly; gula broadly triangular, creased by transverse, anastamosing corrugations; eyes shallowly emarginated by supra-antennal ridge, dorsal and ventral lobes subequal; antennae extending nearly to middle of pronotum, segments gradually enlarged distally, forming very weak club; mentum small, trapezoidal, medially protuberant, exposing labial palps, ligula and maxillae; prementum small, quadrate.

*Pronotum*: convex, slightly broader than long, anterior angles broadly rounded, posterior angles angulate, with narrowly rounded apices; posterior pronotal margin broadly raised, lateral margins narrowly, weakly upturned, becoming obsolete anteriorly; procoxae separated by diameter of one coxal cavity.

*Elytra*: convex, strongly deflexed laterally, with epipleura ventrolateral in position; strongly, evenly, declivous posteriorly, tapering to acutely rounded apex; width at humeri subequal to that of pronotal base, maximum width slightly greater than maximal pronotal width; epipleura abruptly narrowed just behind humeri, gradually tapering posterad to

elytral apex; epipleural ridge clearly defined throughout or obsolete anteriorly and posteriorly.

*Mesosternum*: anteriorly concave, receiving prosternal process; mesocoxae separated by slightly less than width of coxa; mesepisternum trapezoidal, anterior border arcuate, twice length of posterior border; mesepimeron trapezoidal, 1/4 length of mesepisternum. *Metasternum*: subequal in length to mesocoxal diameter; mesocoxal process truncate; metasternal groove 3/4 length of metasternum; antecoxal groove deeply incised, nearly attaining lateral metasternal margin; antecoxal piece gradually broadened laterally to about 4 times mesal breadth; *abdomen*: sternites convex, separated by deeply incised sutures; intercoxal process broad, rounded; sternites 1 to 3 subqual in length; fourth sternite 2/3 length of 3; fifth sternite nearly as long as third and fourth combined.

*Legs*: robust, moderately long; femora weakly clavate, widest about 2/3 distance from base, about 1/2 their length extending beyond lateral body margins, narrow strip of fine, yellow setae extending along inner 1/2 to 1/4 of femoral surface; tibiae subequal to femora in length, slightly, gradually enlarged distally, with 2 narrow, parallel lines of fine, yellow setae along distal 1/2 to 2/3 of inner surface, expanding to cover entire inner surface of apex; distal third of protibia moderately curved posteromesally, mesotibia weakly curved and metatibia straight; tarsae clothed ventrally with fine, yellow pubescence, reduced to 2 subparallel lines on distitarsus; tarsal claws 1/3 to 1/2 length of distitarsus.

*Female*: Similar to male but averaging about 15% larger; femora lacking elongate strip of fine, yellow setae; tibial setal lines usually slightly less extensive.

*Diagnostic features*: Distinguished from other genera of coelometopine tenebrionids except *Coelocnemis* by the 2 parallel lines of yellow setae on the inner tibial surface. Differs from *Coelocnemis* by the strip of yellow setae on the basal, inner surface of the femora (absent in *Coelocnemis*) and by the small, trapezoidal mentum (mentum large, oval, or hexagonal in *Coelocnemis*).

## Key to the Species of *Oenopion*

1. Strial punctures of elytra exceedingly coarse, more than 10 times diameter of interstrial punctures; frons very coarsely punctate ..... *zopheroides* (Horn)

1′. Strial punctures of elytra fine, less than 5 times diameter of interstrial punctures; frons finely punctate ..... 2

2. Prosternal process prominent; mesepimeron glabrous ..... ..... *gibbosus* Champion

2′. Prosternal process declivous; mesepimeron coarsely punctate ..... ..... *adeptus* new species

## *Oenopion gibbosus* Champion

*Oenopion gibbosus* Champion, 1885:99 (Table 5, Fig. 8).

Male: *Head*: Cranium finely, moderately densely punctate, becoming more coarsely so near epistomal suture and moderately punctato-rugose laterad of gula; epistoma strongly depressed below level of frons; deep, incised grooves bordering eye postero-dorsally and antero-ventrally.

*Pronotum*: disk highly convex, about 1.25 times broader than long, uniformly, finely punctate; lateral margins arcuate anteriorly, becoming nearly straight posteriorly; anterior corners broadly rounded, posterior corners obtusely angulate (105°); anterior border weakly biemarginate, posterior border weakly, convexly arcuate; hypomeron subglabrous, few fine punctures near dorsal margin; prosternum obsoletely rugose, with a few moderately coarse punctures medially; prosternal process prominent, rounded, densely, moderately coarsely punctate.

*Elytra*: about 1.5 times longer than broad, broadest near middle; strial punctures moderately coarse, separated by 2 to 4 times diameter; interstriae very finely sparsely punctate, weakly undulating, sparsely marked by fine, confused creases; epipleural ridge nearly obsolete, weakly defined anteriorly, but not reaching humerus, bordered dorsally by very coarse, irregular punctures; epipleuron glabrous, narrow, broadening slightly near humerus.

*Mesosternum*: coarsely punctato-rugose anteriorly, moderately rugose, finely, sparsely punctate posteriorly; mesepisternum coarsely, densely punctate on anterior 2/3, glabrous on posterior 1/3; mesepimeron glabrous; *metasternum*: finely, moderately densely punctate, very weakly rugose; metepisternum about 3.5 times longer than broad, coarsely, somewhat obsoletely punctate; *abdomen*: sternites finely, moderately densely punctate.

*Legs*: femora densely, moderately coarsely punctate, moderately rugose on basal, posterior surface; longitudinal strip of fine yellow setae extending along basal 1/5 of inner surface; parallel rows of setae extending along distal half of inner tibial surface.

*Female*: Unknown.

*Holotype male*: Cerro de Plumas, Vera Cruz, Mexico (see Selander and Vaurie 1962: 25), Hoege. Elytral length 13.3mm; greatest elytral width 9.0mm; pronotal length 5.9mm; greatest pronotal width 7.3mm; basal pronotal width 5.3mm. I am not aware of any specimens other than the holotype, which is deposited in the British Museum of Natural History.

*Diagnosis*: *O. gibbosus* is most similar to *O. adeptus* Doyen, differing by the prominent prosternal process (declivous in *adeptus*), the presence of the dorsal optic groove (absent in *adeptus*), the glabrous mesepimeron (coarsely punctate in *adeptus*) and the relatively short metepisternum.

## *Oenopion zopheroides* (Horn), new combination
## (Fig. 1)

*Iphthimus zopheroides* Horn, 1874:34.

MALE: *Head*: Cranium densely, very coarsely punctate, becoming reticulately punctate near epistomal suture and rugose ventrolaterally; epistoma strongly depressed below level of frons; deep, incised grooves bordering eye dorsally and anteroventrally.

*Pronotum*: disk convex, subrectangular, about 1.2 times broader than long, sparsely, finely punctate medially, becoming more coarsely so laterally; lateral margins subparallel in anterior 3/5, moderately, abruptly convergent posteriorly; anterior corners broadly rounded, approximately 90°; posterior corners obtuse or weakly everted and slightly acute; an-

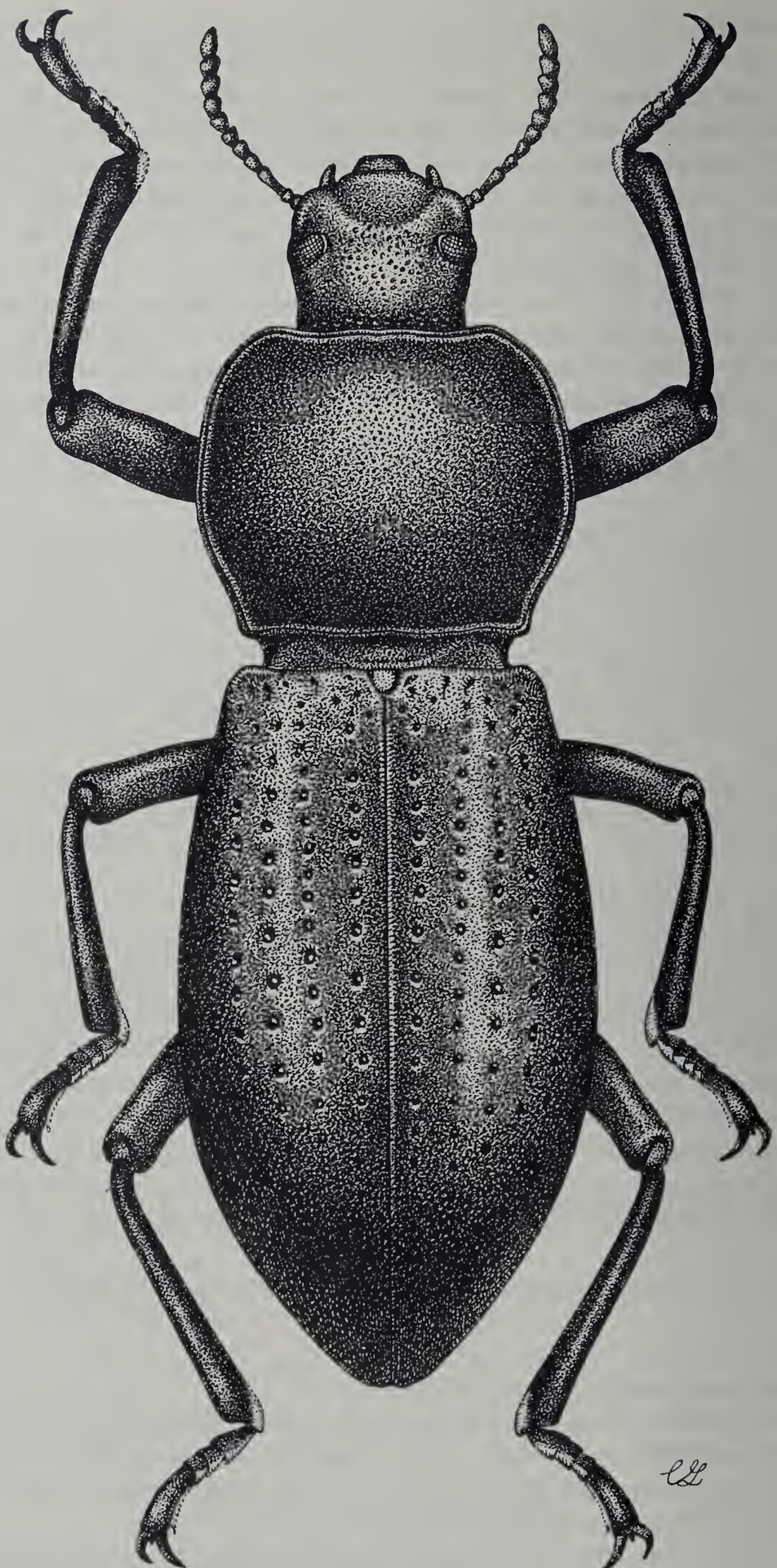

Fig. 1. Male of *O. zopheroides* (Horn).

terior border straight or very weakly emarginate; posterior border nearly straight; hypomeron sparsely, finely punctate near dorsal margin, other-

wise glabrous; prosternum sparsely, coarsely punctate, sometimes weakly rugose medially; prosternal process declivous, posteriorly rounded, finely, sparsely punctate.

*Elytra*: about 1.75 times longer than broad, broadest behind middle; strial punctures exceedingly coarse, separated by 1 to 2 times puncture diameter; interstriae finely, sparsely punctate, weakly undulating medially

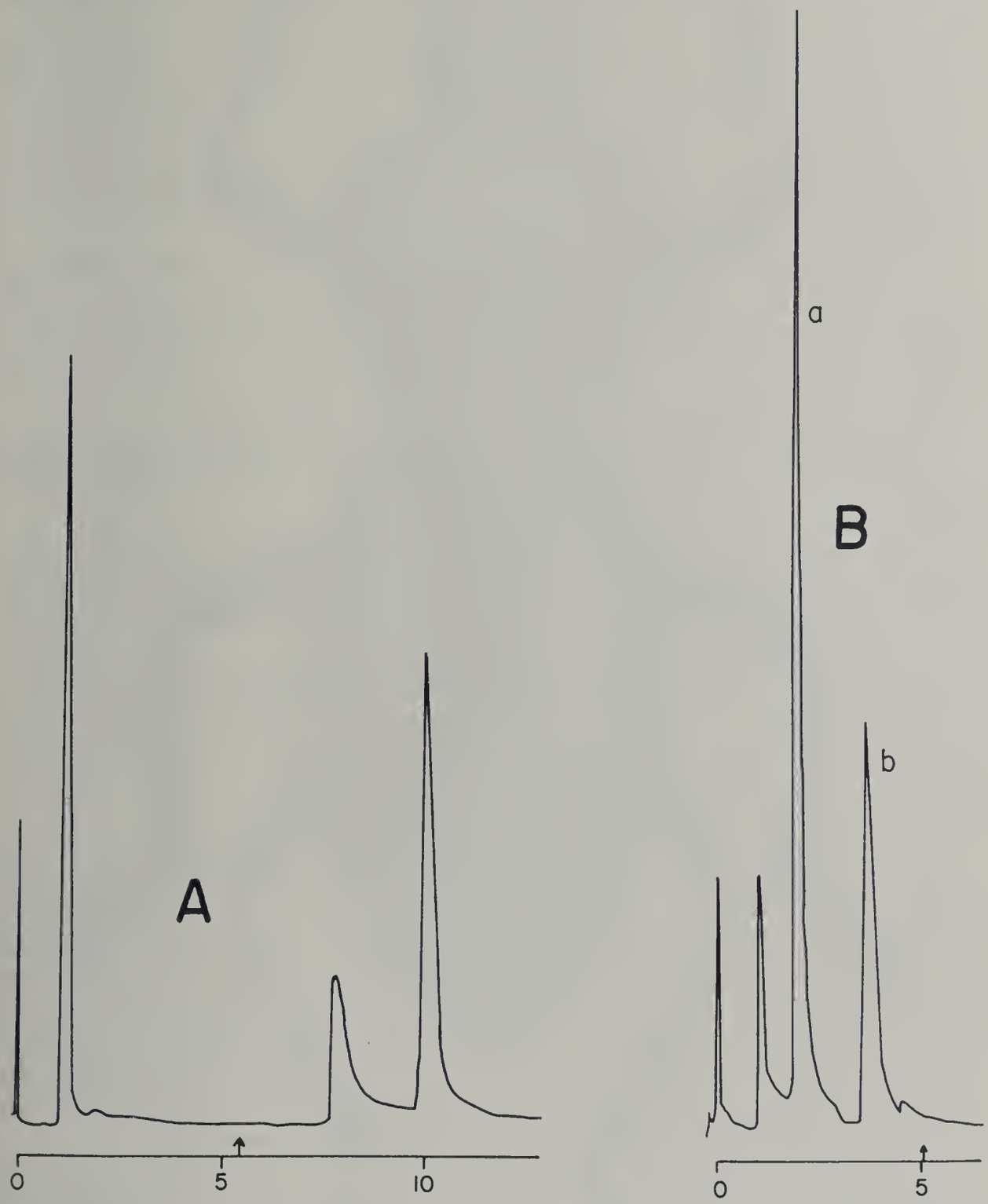


Fig. 2. Chromatographs of the defensive secretions of *Iphthimus* and *Oenopion*. A. Chromatograph of pooled secretions of 9 *I. lewisi* Horn. B. Chromatograph of pooled secretions of 3 *O. zopheroides* (Horn). Peaks *a* and *b* probably represent p-toluquinone and p-ethylquinone, respectively. Other components have not been identified. Results were obtained using a Varian Aerograph Model 1200-1 with a flame ionization detector, on 5% SE-30. Temperature programming was linear at 10°C per minute, from 75°C to 175°C. Arrows indicate onset of the temperature program.

to weakly rugose near humeri, sparsely marked by moderately coarse, confused creases; epipleural ridges clearly defined except near humerus; epipleuron narrow posteriorly, broadening abruptly near humerus, intersected by transverse creases, fine anteriorly, coarse posteriorly and accompanied by fine, dense punctation.

*Mesosternum*: punctato-rugose anteriorly, finely, sparsely punctate posteriorly; mesepisternum coarsely, moderately densely punctate on anterior 2/3, very coarsely, densely punctate on posterior 1/3; mesepimeron coarsely, sparsely and irregularly punctate; *metasternum*: sparsely set with moderate punctures mesally, these becoming coarse and dense laterally; metepisternum about 5 times longer than wide, coarsely, densely punctate; *abdomen:* sternites separated by weakly incised intersegmental sutures; anterior 3 sternites coarsely, moderately densely punctate; posterior 2 more finely punctate.

*Legs*: profemur coarsely, moderately densely punctate and weakly rugose; mesofemur and metafemur more finely, sparsely punctate, barely rugose; narrow, longitudinal strip of fine, yellow setae extending along basal 1/4 to 1/3 of inner femoral surface; parallel rows of yellow setae extending along distal 1/2 to 2/3 of inner tibial surface.

*Female*: Differs from male as stated in generic description.

*Measurements*: Elytral length 11.9 to 17.0mm; greatest elytral width 7.0 to 9.6mm; pronotal length 5.6 to 7.6mm; greatest pronotal width 6.5 to 9.0mm; basal pronotal width 5.2 to 6.9mm.

*Type*: Holotype male [Museum of Comparative Zoology, Harvard University]. No data is associated with the holotype, but Horn (1874:34) stated that it was probably collected in New Mexico. Holotype measurements: elytral length, 12.8mm; greatest elytral width 7.5mm; pronotal length 5.7mm; greatest pronotal width 6.9mm; basal pronotal width 5.2mm.

*Diagnosis and discussion*: *O. zopheroides* differs from the other 2 species in the genus by the extremely coarse strial punctures and the coarse cranial and ventral body punctation. It differs from *O. gibbosus* by the relatively elongate elytra.

The relatively small mentum, exposing the ligula and maxillae, and the unique setal patterning on the legs exclude this species from the genus *Iphthimus*. *Iphthimus* has a large, flattened mentum, concealing the mouthparts, a distal concentration of tibial setae, gradually becoming diffuse proximally, and lacks femoral setae. In addition, the defensive secretions of *I. lewisi* Horn and *O. zopheroides* show distinct differences in composition (fig. 2; see Doyen, 1970, for details). Conversely, the morphological characters, along with general body structure and dimensions, are shared with other species of the genus *Oenopion*. The composition of the defensive secretions of the other species of *Oenopion* is not known.

*Additional material examined*: Texas, Cameron Co., Brownsville, VI-1901, no collector [COR] (1); Texas, no data [MCZ] (2); Mexico, San Luis Potosi, Ciudad del Maiz, 5 mi. E., 25-VIII-1954, R. R. Dreisbach [USNM] (1); 8 mi. E., 26-VIII-1969, J. T. Doyen and J. A. Haddock, under loose bark *Quercus* sp. snags [California Insect Survey] (3).

*Oenopion adeptus* Doyen, NEW SPECIES

MALE: *Head*: Cranium finely, moderately densely punctate, becoming more coarsely so near epistomal suture and on genae, moderately rugose

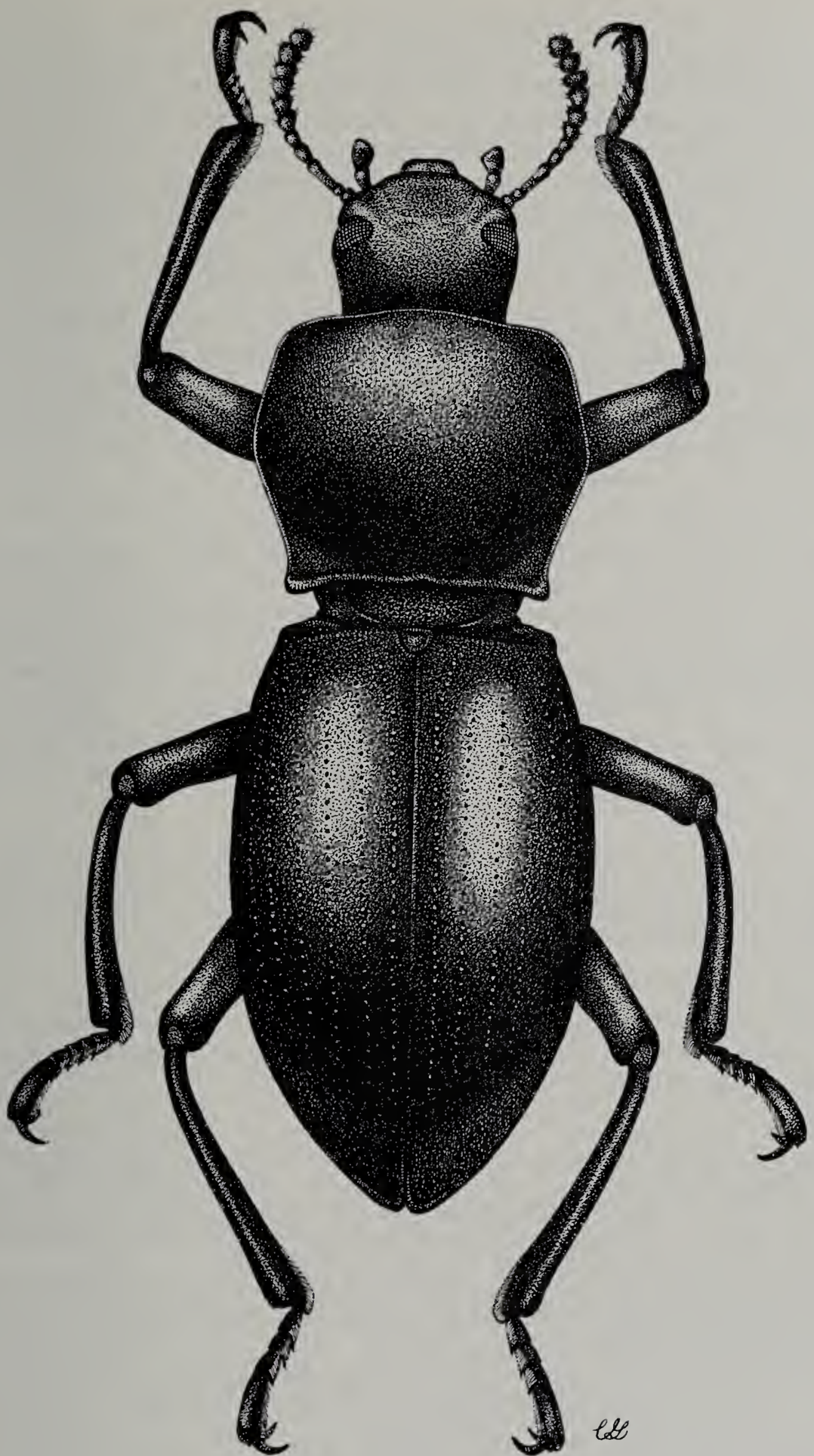

Fig. 3. Male of *O. adeptus* new species.

laterad of gula; epistoma not depressed below level of frons; deeply incised groove bordering eye anteroventrally.

*Pronotum*: disk convex, rounded, about 1.15 to 1.25 times broader than long, finely, sparsely punctate medially, becoming slightly more coarsely so laterally; lateral margins evenly arcuate anteriorly, becoming nearly straight in posterior half; anterior corners broadly, obtusely rounded, posterior corners slightly everted, acute (80°); anterior border nearly straight, posterior border very weakly bimarginate; hypomeron sparsely, moderately coarsely and obsoletely punctate dorsally, moderately rugose ventrally; prosternum strongly rugose with a few coarse punctures; prosternal process declivous, rounded posteriorly, finely, sparsely punctate.

*Elytra*: about 1.6 times longer than broad, broadest slightly behind middle; strial punctures moderately coarse, separated by 2 to 3 times diameter; interstriae very finely, sparsely punctate, sparsely marked by very fine, confused creases; epipleural ridge well defined throughout, forming prominent, obtusely rounded elytral humeri; epipleuron narrow posteriorly, abruptly broadened near humeri, glabrous or finely punctate and crossed by numerous fine, transverse creases, especially on posterior half.

*Mesosternum*: coarsely punctato-rugose anteriorly, finely, sparsely punctate posteriorly; mesepisternum coarsely, moderately densely punctate on anterior 2/3, coarsely, obsoletely punctate on posterior 1/3; mesepimeron coarsely, moderately densely and obsoletely punctate; *metasternum*: finely, moderately densely punctate; metepisternum about 5 times longer than broad, coarsely, moderately densely punctate; *abdomen*: sternites separated by deeply incised intersegmental sutures; anterior 3 sternites moderately densely, finely to moderately coarsely punctate; posterior 2 sternites moderately coarsely and densely punctate.

*Legs*: profemur moderately coarsely and densely punctate, weakly rugose on basal, posterior surface; longitudinal strip of fine yellow setae extending along basal 1/5 to 1/3 of inner surface; parallel rows of setae extending along distal 1/2 to 2/3 of inner tibial surface.

*Female*: Differs from male as stated in generic description.

*Measurements*: Elytral length 10.5 to 16.0mm; greatest elytral width 6.5 to 10.2mm; pronotal length 5.2 to 7.5mm; greatest pronotal width 6.0 to 9.3mm; basal pronotal width 4.7 to 7.2mm.

TYPES: *Holotype* male, Chipinque Mesa, nr. Monterrey, Nuevo Leon, Mexico, 5400', 29-VII-1963, A. T. Howden; *allotype* female, same locality as holotype, 22-VII-1963, H. & A. Howden; 4 male, 5 female *paratypes*, same locality as holotype, 8/29-VII-1963, H. & A. Howden. The holotype and allotype in [Canadian National Collection, Ottawa]; paratypes in [Canadian National Collection] and [H. F. Howden].

*Measurements of holotype*: elytral length 14.6mm; greatest elytral width 9.4mm; pronotal length 7.4mm; greatest pronotal width 8.8mm; basal pronotal width, 6.5 mm.

*Additional material examined*: Mexico, Nuevo Leon, Apodaca, 5-VI-1956, I. Matezans [USNM] (1); 8-VI, I. Pedrero [USNM] (1); Chipinque Mesa, nr. Monterrey, 24/26-VIII-1960, H. F. Howden [CNC] (3); Liñares, 20 mi. W., 8-IX-1946, E. C. Van Dyke [CAS] (1); Villa de Santiago, L. Leal [USNM] (1); Puebla, Cacaloapan, 20-VIII-1963, F. D. Parker & L. A. Stange [UCD] (1).

DIAGNOSIS: *O. adeptus* is most similar to *O. gibbosus* Champion, differing in the characters stated in the diagnosis for the latter species.

### Acknowledgments

I am grateful to the following persons who made available specimens from the collections under their care: J. M. Campbell and H. F. Howden, Canadian National Museum, Ottawa [CNC]; J. F. Lawrence and P. J. Darlington, Museum of Comparative Zoology, Harvard University, Cambridge [MCZ]; H. B. Leech, California Academy of Sciences, San Francisco [CAS]; R. O. Schuster, University of California, Davis [UCD]; J. Shafrick, Cornell University, Ithaca [COR]; T. J. Spilman, United States National Museum, Washington, D. C. [USNM]; R. T. Thompson, and the authorities of the British Museum of Natural History, London, for permitting me to examine type material. The excellent illustrations of the adult beetles were done by Mrs. Celeste Green, to whom I am very thankful. The manuscript was read by J. A. Chemsak, who offered many helpful comments.

### Literature Cited

Champion, G. C. 1885. Biologia Centrali-Americana, Insecta, Coleoptera (Tenebrionidae) 4(1):89-136.

Horn, G. H. 1874. Descriptions of new species of United States Coleoptera. Trans. Amer. Ent. Soc. 5:20-43.

Selander, R. B., and Vaurie, P. 1962. A gazetteer to accompany the "insecta" volumes of the Biologia Centrali-Americana. Amer. Mus. Novitates 2099:1-70.

## BOOK REVIEW

*Taxonomists glossary of genitalia in insects.* Edited by S. L. Tuxen. 1970. Second edition. Munksgaard, Copenhagen (available in U.S. from S-H Service Agency, Inc., P. O. Box 2000, 260 Heights Rd., Darien, CT 06820). 359 p., 248 fig. Hard cover, $27.50.

The 1956 first edition of this title was a landmark in establishing some standardization and homologies for the complicated and voluminous terms applied to insect genitalia. This new edition contains 5400 terms which are defined. Sixty-six of the 248 figures are new, and 8 of the chapters have been completely rewritten. The authors comprise 35 of the top taxonomic specialists.

Snodgrass has said "The great structural diversity in the genitalia of insects is the delight of taxonomists and the despair of morphologists." Tuxen (p. 9) follows this quote appropriately: "May the present work help to heighten the delight and diminish the despair."

The chapter on Coleoptera (p. 80-88) is authored by C. H. Lindroth and Ernst Palmen. Unfortunately this chapter shows little improvement over the previous edition, and it provides a very cursory treatment of the wide variety of beetle genitalia. Obviously 10 figures and about 5 pages of text are insufficient, even for a general treatment of the largest and most diverse order of insects. It provides a useful introduction.

The most serious objection I have to this valuable reference is the unusually high price. Even the specialized references which would expect half the sales volume are priced much below this volume. The binding, although hard cardboard, is far from a quality cloth binding which should be expected at this high price. The volume should be in every library, but the cost will probably deter sales to individual taxonomists.—R. E. Woodruff.